

CLASSEN[®]

RECIPROCATING AERATOR



MODELS:

RA-21H

Reciprocating Aerator Honda GX160

RA-21B

Reciprocating Aerator B&S Intek 850

MAN C100722

Rev A. 02-2013

Original Language Instructions



SCHILLER

**GROUNDS
CARE**

OPERATOR'S MANUAL

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

CALIFORNIA

Proposition 65 Warning

Battery posts, terminals, wiring insulation, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

WASH HANDS AFTER HANDLING.

IMPORTANT MESSAGE

Thank you for purchasing this Classen product. You have purchased a world class product, one of the best designed and built anywhere.

This machine comes with an Operation and Safety Manual, Parts and Service Manual, and Engine Manual. The useful life and good service you receive from this machine depends to a large extent on how well you read and understand these manuals. Treat your machine properly, lubricate and adjust it as instructed, and it will give you many years of reliable service.

Your safe use of this Classen product is one of our prime design objectives. Many safety features are built in, but we also rely on your good sense and care to achieve accident-free operation. For best protection, study the manuals thoroughly. Learn the proper operation of all controls. Observe all safety precautions. Follow all instructions and warnings completely. Do not remove or defeat any safety features. Make sure those who operate this machine are as well informed and careful in its use as you are.

See a Classen dealer for any service or parts needed. Classen service ensures that you continue to receive the best results possible from Classen products. You can trust Classen replacement parts because they are manufactured with the same high precision and quality as the original parts.

Classen designs and builds its equipment to serve many years in a safe and productive manner. For longest life, use this machine only as directed in the manuals, keep it in good repair and follow safety warnings and instructions. You'll always be glad you did.

Classen
Schiller Grounds Care, Inc.
1028 Street Road
Southampton, PA 18966-4217

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This Operator / Parts Manual is part of the machine. Suppliers of both new and second-hand machines must make sure that this manual is provided with the machine.

NOTICE !!!

Unauthorized modifications may present **extreme** safety hazards to operators and bystanders and could also result in product damage.

Schiller Grounds Care, Inc. strongly warns against, rejects and disclaims any modifications, add-on accessories or product alterations that are not designed, developed, tested and approved by Schiller Grounds Care, Inc. Engineering Department. Any Schiller Grounds Care, Inc. product that is altered, modified or changed in any manner not specifically authorized after original manufacture-including the addition of "after-market" accessories or component parts not specifically approved by Schiller Grounds Care, Inc. will result in the Schiller Grounds Care, Inc. Warranty being voided.

Any and all liability for personal injury and/or property damage caused by any unauthorized modifications, add-on accessories or products not approved by Schiller Grounds Care, Inc. will be considered the responsibility of the individual(s) or company designing and/or making such changes. Schiller Grounds Care, Inc. will vigorously pursue full indemnification and costs from any party responsible for such unauthorized post-manufacture modifications and/or accessories should personal injury and/or property damage result.



This symbol means:
ATTENTION!
BECOME ALERT!

Your safety and the safety of others is involved.

Signal word definitions:

The signal words below are used to identify levels of hazard seriousness. These words appear in this manual and on the safety labels attached to Schiller Grounds Care, Inc. machines. For your safety and the safety of others, read and follow the information given with these signal words and/or the symbol shown above.

⚠ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices or property damage.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, **MAY** result in property damage.

Schiller Grounds Care, Inc.

1028 Street Road
Southampton, PA 18966 U.S.A
Phone: 215-357-5110
Fax: 215-357-8045

MODEL NUMBER

SERIAL NUMBER

MODEL NUMBER: This number appears on sales literature, technical manuals and price lists and serial tag.

SERIAL NUMBER: This number appears only on your unit. It contains the model number followed consecutively by the serial number. Use this number when ordering parts or seeking warranty information.

OPERATOR PREPARATION & TRAINING

READ THE OPERATION & SAFETY MANUAL

- If an operator or mechanic cannot read English, it is the owner's responsibility to explain this material to them. If any portion of this material is unclear, contact your factory representative for clarification.
- Become familiar with the safe operation of the equipment, operator controls and safety signs. Be prepared to stop the engine quickly in an emergency. Do not operate or allow another person to operate this machine if there are any questions about safety.
- All operators and mechanics should be trained. The owner is responsible for training the users.
- Wear appropriate clothing, including safety goggles or safety glasses with side shields when operating. Wear substantial footwear and long pants. Do not operate barefoot or wearing open sandals. Long hair, loose clothing or jewelry may get tangled in moving parts.
- Wear appropriate hearing protection.
- Never allow children, unskilled or improperly trained people to operate this equipment. Local regulations can restrict the age of the operator.
- Do not put hands or feet near or under rotating parts.
- Never pick up or carry the unit while the engine is running.
- Keep warning labels and this operator's manual legible and intact. Replacement labels and manuals are available from the factory.
- Do not operate machine while under the influence of drugs or alcohol, or any other condition of impairment.
- The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people, or property.



SITE PREPARATION & CIRCUMSTANCES

- Evaluate the terrain to determine how to safely perform the job. Only use accessories and attachments approved by the manufacturer.
- Clear the area of objects such as rocks, toys, wire or any other debris that may be thrown or get tangled in the aerator.
- Be sure the area is clear of pets and people, especially young children. Never assume they will remain where you last saw them. Stop the machine if any enter the area.
- Only USE in daylight or in good artificial light.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.

MACHINE PREPARATION

- Read engine manual.
- Do not tamper with or defeat safety devices. Keep guards, shields and interlock safety devices in place and in proper working condition. They are for your protection.
- Keep all fasteners such as nuts, bolts, and pins well secured.
- Visually inspect aerator and the assembly for wear or damage. Replace worn or damaged parts.
- Verify that machine and attachments, if any, are in good operating condition.
- Do not engage aerator until ready to use.

OPERATING SAFELY**IN GENERAL**

- Use extra care when loading or unloading the machine into a trailer or truck.
- Never operate without guards, plates, or other safety protective devices in place.
- Do not run the engine in an enclosed area where dangerous carbon monoxide fumes can collect.
- Never leave a machine unattended. Turn off aerator and stop engine before leaving the machine.
- Use extreme caution when pulling machine towards you.
- Stop operation if someone approaches.

STARTING

- Start according to instructions in this manual or on the machine.
- Before attempting to start the engine, make sure the aerator is disengaged.
- When starting the engine, make sure hands and feet are clear of the aerator.
- Do not engage aerator at full throttle. Throttle to idle or lowest possible engine speed.
- Do not change engine governor settings or overspeed the engine. Operating the engine at excessive speed can increase the hazard of personal injury.

**INTERRUPTING OPERATION**

Before leaving the operator's position shut off engine.

- Stop the engine, disengage the blade, set parking brake and wait until the blade stops rotating:
 - before refueling.
 - before making height adjustment unless the adjustment can be made from the operator's position.
- Stop the engine, disengage the aerator, set parking brake and disconnect the spark plug wire:
 - before clearing blockages or unclogging;
 - before checking, cleaning or working on the machine;
 - after striking a foreign object. Inspect the machine for damage and have repairs made as needed before restarting;
 - if the machine begins to vibrate abnormally: shut off machine immediately. Inspect and have

repairs made as needed before restarting;

- except for repairs or adjustments as specifically noted, such as for carburetor adjustment, where the engine must be running. Keep hands and feet clear of moving parts in these circumstances.
- Allow the aerator to come to a complete stop when stopping operation to clear blockages, unclog, inspect the machine, do maintenance or repair.
- Reduce the throttle setting during engine shutdown and, if the engine is provided with a shutoff valve, turn the fuel off at the conclusion of operation.
-

**OPERATING ON SLOPES**

Use Extra Care When Working On Slopes

- Do not operate on slopes if uneasy or uncertain. Ultimate responsibility for safe operation on slopes rests with the operator.
- Do not operate on steep slopes.
- Keep all movement on slopes slow and gradual.
- Do not cut sod near drop-offs, ditches or embankments. The machine could suddenly turn over if a wheel runs over the edge or an edge caves in.
- Do not turn on slopes unless necessary, and then turn slowly and downhill when possible.
- Be sure of your footing on slopes.

MAINTENANCE SAFETY

IN GENERAL

- Maintain machine according to manufacturer's schedule and instructions for maximum safety and best results.
- Park machine on level ground.
- Never allow untrained personnel to service machine.
- Guards should only be removed by a qualified technician for maintenance or service. Replace when work is completed.
- Adjust or repair only after the engine has been stopped and the aerator has stopped moving.
- Disconnect spark plug wire(s) before doing any maintenance.
- Replace parts if worn, damaged or faulty. For best results, always replace with parts recommended by the manufacturer.
- Do not dismantle the machine without releasing or restraining forces which may cause parts to move suddenly.
- Provide adequate support, e.g. jack stands for lifted machine or parts if working beneath.
- Do not put hands or feet near or under rotating parts.
- Clean up spilled oil or fuel thoroughly.
- Replace faulty mufflers.
- To reduce fire hazards, keep the engine, muffler, and fuel storage area free of grass, leaves, debris buildup or grease.
- Never attempt to make adjustments while the engine is running except for repairs or adjustments as specifically noted, such as for carburetor adjustment, where the engine must be running. Keep hands and feet clear of moving parts in these circumstances.

FUEL SAFETY



WARNING



- Gasoline is flammable; gasoline vapors are explosive. Use extra care when handling.
- Store only in containers specifically designed for fuel.
- When refueling or checking fuel level:
 - Stop the engine and allow to cool;
 - Do not smoke;
 - Refuel outdoors only;
 - Use a funnel;
 - Do not overfill;
 - If fuel is spilled, do not attempt to start the engine until the spill is cleaned up and vapors have cleared.
 - Replace caps on fuel containers and tanks securely.

Sparks from static electricity can start fires or cause explosions. Flowing fuel can generate static electricity. To prevent static electricity sparks:

- Keep containers electrically grounded. Do not fill containers in a vehicle or on a truck or trailer bed with a plastic liner. Fill containers on the ground away from the vehicle.
- When practical, remove gasoline powered equipment from the truck or trailer and refuel it on the ground. If equipment must be refueled on the truck or trailer, refuel from a portable container rather than a dispenser nozzle.
- Keep the dispenser nozzle in contact with the rim of the fuel tank or container opening until fueling is complete. Do not use a nozzle lock-open device.
- If fuel is spilled on clothing change it immediately.

STORAGE SAFETY

- Stop the engine and allow to cool before storing.
- Drain the fuel tank outdoors only.
- Store fuel in an approved container in a cool, dry place.
- Keep the machine and fuel containers in a locked storage place to prevent tampering and to keep children from playing with them.
- Do not store the fuel container or equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark.
- Appliances such as furnaces and water heaters with a pilot light have an open flame.
- Keep gasoline storage area free of grass, leaves and excessive grease to reduce fire hazard.
- Clean debris from cutting units, drives, mufflers and engine to help prevent fires.
- Clean up any spilled gasoline or oil in the storage area.

RA-21

Dimensions:

Width.....	31.5" (800 mm)
Length.....	64" (1626 mm)
Length (handle folded).....	49" (1245 mm)
Height (transport).....	39" (991 mm)
Height (handle folded).....	24" (610 mm)
Maximum gate Width.....	32" (813 mm)

Net Weight:

Weight.....	261 lbs. (119 Kg)
Removable weights.....	N/A

Speed:

Aerate.....	up to 305 f.p.m. (2.84 km/h)
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Engines:

Model RA-21H

Model.....	GX160
	Honda, 4.0 h.p., 4 cycle
Starter.....	Recoil, on/off switch
Governor.....	3900 RPM, no load
Idle Speed.....	1400 + 100 RPM
Fuel Tank.....	.66 gal. (2.5 L)
Gear Reduction.....	6 to 1

Model RA-21B

Model.....	#12S4520131FB, Type 0141, Trim .01
	Briggs & Stratton 6.0 h.p., 4 cycle
Starter.....	Recoil, on/off switch
Governor.....	3200 RPM +/- 100 RPM, no load
Idle Speed.....	2000 RPM
Fuel Tank.....	3.2 qt. (3.0 L)
Gear Reduction.....	6 to 1

Drive:

Machine.....	Push off the tines
Primary.....	Sheaves and Belts

Wheels:

Front.....	2.80-4
Rear.....	4.10 x 3.50 -4

Aeration:

Tines....	5/8" (15.875 mm) diameter, 8 per unit
Penetration Depth.....	2 3/4" (70 mm) max.
Swath Width.....	20.8" (558 mm)
Hole Pattern....	2.6" x 7.5" (66 x 191 mm) on center
Production.....	Up to 26,000 sq. ft. / hour (2415 sq.m /hour)

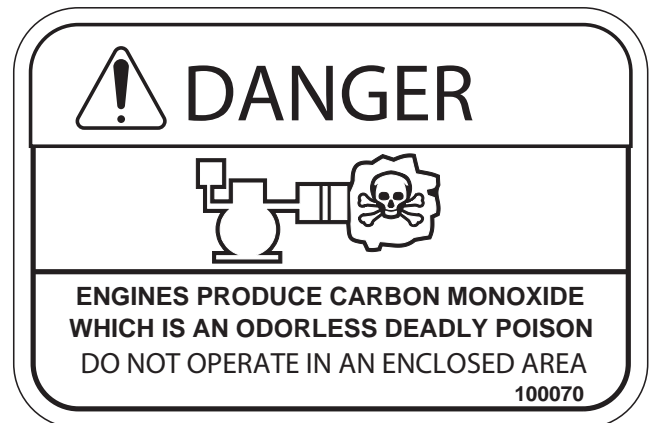
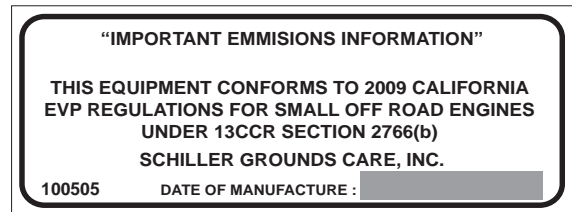
WARNING LABELS

Warning labels are an important part of the safety system incorporated in this machine.

Replace labels if damaged or illegible.



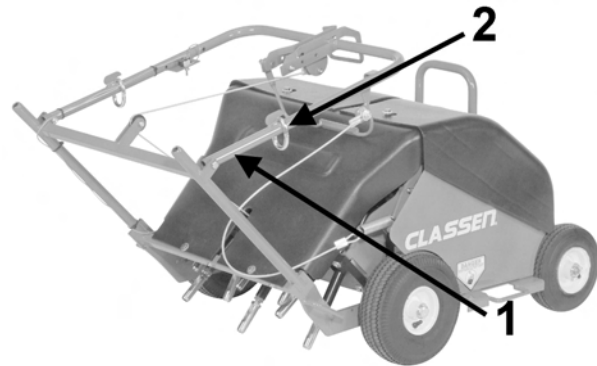
All Guards Must Be In
Place While Machine
Is In Operation



SET-UP INSTRUCTIONS

NOTE: Units ship with no gas or oil.

1. Cut banding and roll aerator off pallet.
2. Unfold by pulling up on handle **1**. Slide lock rings down
3. Add oil to the engine with the engine resting in a level position. Refer to the engine manufacturer's Owners manual for the correct type and amount of oil.
4. Fill the fuel tank according to the engine manufacturer specifications.



CONTROLS

FUEL SHUT OFF(A)

Move to the "OFF" position to shut off the fuel whenever transporting the machine by trailer or storing it. Move to the "ON" position before starting the engine.

CHOKE (C)

Move to the choke position to apply the choke. Move to the run position to remove the choke.

THROTTLE (D)

Controls the engine speed.

BELT IDLER HANDLE (F)

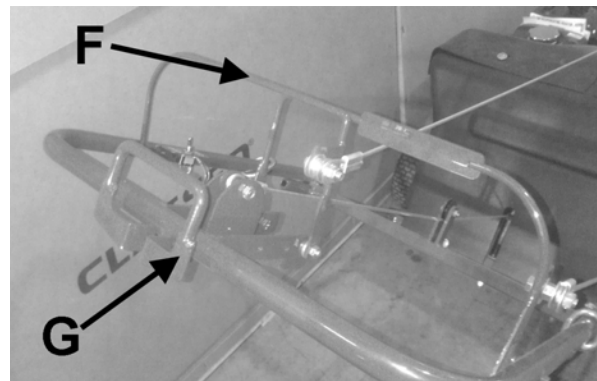
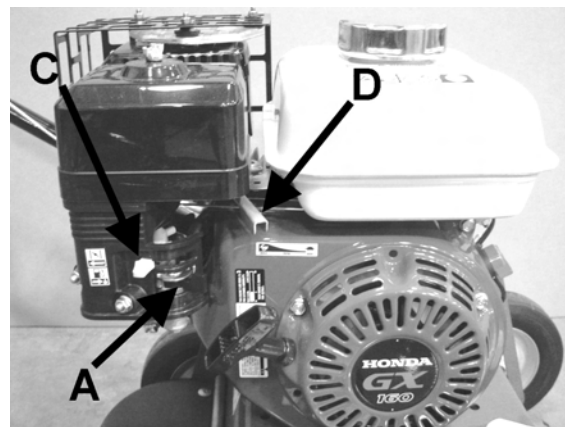
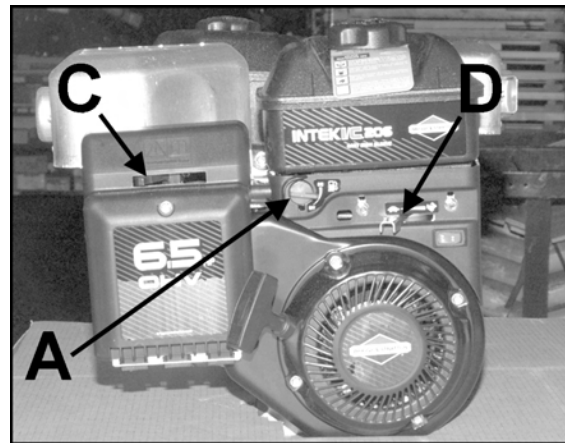
This lever engages the drive belt idler. Pull it back to engage. This lever must be held back for operation. When released, forward motion will stop. If the lever fails to spring forward when released, immediately contact the manufacturer as this is a safety feature.

TINE BLOCK LEVER (G)

This lever swings the tine block into the operating position. Release the handle and allow lever to move forward. This will place it into the operating position.

ENGINE SWITCH (H)

Move to the "OFF" position to stop the engine.
Move to the "ON" position before starting the engine.

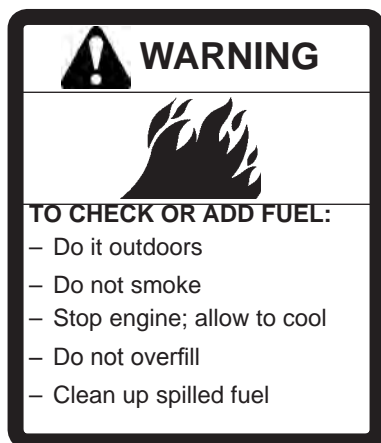


PRE-OPERATION CHECK LIST OWNER'S RESPONSIBILITY

- Review and follow all safety rules and safety decal instructions.
- Check that all safety decals are installed and in good condition. Replace if damaged.
- Check to make sure all shields and guards are properly installed and in good condition.
- Check that all hardware is properly installed and secured.
- Check to be sure engine is free of dirt and debris. Pay particular attention to the cooling fins, governor parts and muffler. Clean air intake screen. Check air cleaner; service as necessary.
- Check all lubrication points and grease as instructed in manual.
- Inspect area and remove stones, branches or other hard objects that might be thrown, causing injury or damage.
- Check that there are no exposed underground utilities in the work area.

FUELING-Gasoline is extremely flammable and highly explosive under certain conditions. BE SURE to install fuel cap after fueling.

- Fill fuel tank with good quality, clean, unleaded regular petrol (gasoline) to the level recommended by the engine manufacturer.
- Use a funnel to avoid spilling.



BEFORE STARTING THE ENGINE

- Read the operator manual and engine manual.
- Be familiar with all controls, how each functions and what each operates.
- Check the engine oil level and add if necessary. Follow the engine manufacturers recommendations per the engine manual supplied with the machine
- Open the fuel valve.
- **Choke:** For cold starts, set the choke lever to the "CHOKE" position. For warm starts attempt to start without the choke first to avoid flooding. If the engine does not start then use the choke.

STARTING THE ENGINE



WARNING

1. Turn fuel cock to the "open" position.
2. Turn choke on (closed).
3. Put On/Off switch to the On position.
4. Pull recoil starter rope until engine starts.
5. After engine is warm, turn off choke (open).
6. Allow engine to run one minute before using.
7. Check engine rpm setting before operating. DO NOT exceed 3600 rpm.

NOTE: A warm engine requires less choking than a cold engine.

STOPPING OPERATION

1. Put On/Off switch on handle to OFF position.

TO AERATE

1. Release the tine block lever and allow the tines to move forward. Pull the belt idler handle up and hold. The tines will penetrate deeper if you let the machine pull itself forward.

TO STOP AERATING

1. Release the belt idler handle.
2. Pull the tine block lever back to lock.

MAINTENANCE



WARNING

Stop the engine and remove spark plug wire before performing any maintenance.

When replacement parts are required, use genuine Classen parts or parts with equivalent characteristics, including type, strength and material. Failure to do so may result in product malfunction and possible injury to the operator and/or bystanders.

Carbon monoxide present in the exhaust is an odorless and deadly gas. Never start or run the engine where exhaust fumes can collect. Provide enough fresh air to keep fumes from getting too strong.

Replace any warning decals that become illegible immediately.

DAILY MAINTENANCE

Hardware

- Tighten any hardware (nuts, bolts, etc) that are found loose.
- Replace any broken or missing hardware (nuts, bolts, cotter pins, etc.).
- Check to see that set screws on pulley are tight.

Engine

See engine manual for air cleaner service intervals and servicing procedure.

Oil

See engine manual for air cleaner service intervals and servicing procedure.

Aerator

Service:

Stop engine and remove spark plug wire before servicing aerator.

Guards

- Check condition of guards for damage or wear.
- Replace broken, worn, or damaged shield plates.

Belts

- Check condition of belts for damage or wear.
- Replace broken, worn, or damaged belts.

Belt Replacement

- Stop the engine and disconnect the spark plug wire before attempting to replace any belt.

Lubrication

- Grease the crankshaft and arm bearings every 25 hours of operation.

Storage

To prevent possible explosion or ignition of vaporized fuel, do not store equipment with fuel in tank or carburetor in an enclosure with open flame (for example, a furnace or water heater pilot).

Before the equipment is put into storage for any period exceeding 30 days.

1. Drain all fuel from the fuel tank and fuel lines.
2. Start the engine and run until all the fuel is used from the carburetor float bowl and the engine stops.
3. While the engine is still warm, drain the crankcase oil and replace with the proper weight oil corresponding to the season the equipment will be next used.
4. Remove the spark plug and squirt a small amount of engine oil into the cylinder. Slowly pull the starter a few times to distribute oil in the cylinder and reinstall the spark plug.
5. Top off if necessary. See engine manual for details.

To put the equipment into service after an extended period of storage.

1. Check for loose parts and tighten if necessary.
2. Fill the fuel tank and then check the engine oil level.
3. Start the engine and check for fuel leaks. Repair any leaks before operating the unit.

TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
A. Engine will not start.	<ol style="list-style-type: none"> 1. Out of gasoline. 2. Spark plug lead wire loose or disconnected. 3. Defective spark plug. 4. Throttle control lever not in proper position. 5. Engine flooded or flooding. 6. Stale or contaminated gasoline. 7. Engine switch off. 8. Oil level low. 9. Front cover is loose on unit. 	<ol style="list-style-type: none"> 1. Fill gasoline tank. 2. Reconnect spark plug lead wire. 3. Replace spark plug. 4. Move throttle control lever to start position. 5. Start engine with choke fully open. 6. Drain, clean tank and system and refill with fresh gasoline. 7. Turn engine switch to ON position. 8. Fill crankcase to proper oil level. 9. Make sure front cover is secured properly on unit.
B. Loss of power, hard starting.	<ol style="list-style-type: none"> 1. Spark plug lead wire loose. 2. Defective spark plug. 3. Carburetor out of adjustment. 4. Air cleaner dirty. 5. Air vents clogged or plugged. 	<ol style="list-style-type: none"> 1. Tighten spark plug lead wire. 2. Replace spark plug. 3. Properly adjust carburetor. 4. Clean and service air cleaner. (See the engine Operation and Maintenance illustrations.) 5. Clean vent in gasoline tank cap and carburetor
C. Engine will not idle properly.	<ol style="list-style-type: none"> 1. Idle speed too slow. 2. Spark plug gap incorrect. 3. Air cleaner dirty. 	<ol style="list-style-type: none"> 1. Adjust carburetor idle speed or idle mixture. 2. Set spark plug gap; see your Engine Manual 3. Clean and service air cleaner. (See the engine Operation and Maintenance illustrations.)
D. Engine runs hot or overheats.	<ol style="list-style-type: none"> 1. Oil level low. 2. Engine cooling fins or baffles clogged with dirt and debris. 3. Carburetor out of adjustment 	<ol style="list-style-type: none"> 1. Fill crankcase to proper oil level. 2. Clean and remove obstructions. 3. Readjust carburetor.



Fuels and Fuel Additives

You are here: [EPA Home](#) [Transportation & Air Quality](#) [Fuels & Fuel Additives](#) E15 (a blend of gasoline and ethanol)

E15 (a blend of gasoline and ethanol)

On October 13, 2010, the Environmental Protection Agency partially granted Growth Energy's waiver request application submitted under section 211(f)(4) of the Clean Air Act. This partial waiver will allow fuel and fuel additive manufacturers to introduce into commerce gasoline that contains greater than 10 volume percent (vol%) ethanol and up to 15 vol% ethanol (E15) for use in certain motor vehicles once certain other conditions are fulfilled. It is important to remember that there are a number of additional steps that must be completed - some of which are not under EPA control - to allow the sale and distribution of E15. These include but are not limited to submission of a complete E15 fuels registration application by industry and changes to some states' laws to allow for the use of E15.



[What is E15?](#)

[What is the E15 Waiver?](#)

[What Vehicles May Use E15?](#)

[What Vehicles and Engines May Not Use E15?](#)

[The Agency is Deferring Action on the Waiver Request for the Following Vehicles](#)

[Pending Completion of DOE Testing](#)

[What Conditions are Part of the Waiver Decision?](#)

[What is EPA doing to Address Potential Misfueling?](#)

[The Waiver Notices](#)

[The Regulations](#)

What is E15?

Ethanol is an alcohol that can be mixed with gasoline to result in a cleaner-burning fuel. The most common blend of gasoline and ethanol is E10, or 10 percent of ethanol to 90 percent of gasoline. E15 is gasoline containing 15 vol% ethanol.

The primary source of ethanol is corn, but other grains or biomass sources may be used such as sorghum, corn cobs, cornstalks, and switchgrass.

What is the E15 waiver?

In order to protect the emission control systems of vehicles and engines, the Clean Air Act prohibits the introduction of fuels or fuel additives that are not substantially similar to the fuels or additives used in certifying vehicles and engines to emission standards. However, the Act authorizes EPA to grant a waiver of this prohibition for a fuel or additive if it can be demonstrated that vehicles and engines using the otherwise prohibited fuel or additive will continue to meet emission standards over their useful lives.

In March 2009, Growth Energy (a coalition of U.S. ethanol supporters) and 54 ethanol manufacturers applied for a waiver to increase the allowable amount of ethanol in gasoline from E10 to E15. The waiver application included data on the impact of E15 on vehicle emissions, fuel system materials, and driveability. Additional data were developed by the US Department of Energy, which began testing for potential impacts of various ethanol-gasoline blends on motor vehicle emissions. This testing followed enactment of the Energy Independence and Security Act of 2007, which calls for significantly increasing the amount of biofuels, such as ethanol, to be used in transportation fuel. EPA received over 78,000 public comments about Growth Energy's application.

EPA is partially granting Growth Energy's waiver request application. This partial grant waives the prohibition on fuel and fuel additive manufacturers on the introduction into commerce of gasoline containing greater than 10 vol% ethanol and no more than 15 vol% ethanol for use in certain motor vehicles. More specifically, this action has two components. First, we are approving the waiver for and allowing the introduction into commerce of E15 for use in Model Year (MY) 2007 and newer light-duty motor vehicles, which includes passenger cars, light-duty trucks, and medium-duty passenger vehicles.

The second component of the action is that we are not approving the waiver for E15 use in MY2000 and older light-duty motor vehicles, heavy-duty gasoline engines and vehicles (e.g., delivery trucks), highway and off-highway motorcycles, and nonroad engines, vehicles, and equipment (e.g., boats, snowmobiles, and lawnmowers) because there is insufficient test data to support it for these vehicles and engines. The Agency is deferring a decision on the applicability of a waiver with respect to MY2001-2006 light-duty motor vehicles. EPA expects to make a determination for these vehicles after DOE test data for those model years becomes available.

What Vehicles May Use E15?

- MY2007 and newer cars.
- MY2007 and newer light-duty trucks.
- MY2007 and newer medium-duty passenger vehicles.

What Vehicles and Engines May Not Use E15?

- All motorcycles.
- All vehicles with heavy-duty engines, such as school buses, transit buses, and delivery trucks.
- All off-road vehicles, such as boats and snowmobiles.
- All engines in off-road equipment, such as lawnmowers and chain saws.
- All MY2000 and older cars, light-duty trucks, and SUVs.
- All 2001-2006 cars, light-duty trucks, and medium-duty passenger vehicles (pending a waiver decision with respect to those vehicles).

The Agency is Deferring Action on the Waiver Request for the Following Vehicles and Pending Completion of DOE Testing

- All MY2001-2006 cars.
- All MY2001-2006 light-duty trucks.
- All MY2001-2006 medium-duty passenger vehicles.

What Conditions are Part of the Waiver Decision?

EPA placed two types of conditions on the waiver for E15: those for mitigating the potential for misfueling of E15 into vehicles and engines for which E15 is not approved, and those

addressing fuel and ethanol quality. All conditions must be met prior to the introduction of E15 into commerce.

Fuel quality conditions:

Ethanol used for E15 must meet ASTM International D4806-10.
The Reid Vapor Pressure for E15 is limited to 9.0 psi during the summertime.

Misfueling mitigation conditions:

Labels must be placed on E15 retail dispensers indicating that E15 use is only for MY2007 and newer motor vehicles.
Product Transfer Documents (PTDs) must accompany all transfers of fuels for E15 use.
Parties involved in the manufacture of E15 must participate in a survey of compliance at fuel retail dispensing facilities to ensure proper labeling of dispensers.
Parties must submit a plan addressing conditions to EPA for approval.

What is EPA doing to Address Potential Misfueling?

EPA is proposing a regulatory program to help mitigate potential misfueling of certain engines, vehicles and equipment with gasoline containing greater than E10 and no more than E15. This proposed rule would require all E15 fuel dispensers to have a label if a retail station chooses to sell E15 and seeks comment on separate labeling requirements for fuel blender pumps and fuel pumps that dispense E85. Similar to the prohibition in section 211(f)(1), the proposed rule would prohibit the use of gasoline containing greater than 10 vol% ethanol in vehicles and engines not covered by the partial waiver for E15. In addition, the proposed rule would require PTDs specifying ethanol content and Reid Vapor Pressure (RVP) to accompany the transfer of gasoline blended with ethanol and a national survey of retail stations to ensure compliance with these requirements. The proposed rule would also modify the Reformulated Gasoline (RFG) program by updating the Complex Model to allow fuel manufacturers to certify batches of gasoline containing up to E15. The proposed measures would help promote the successful introduction of E15 into commerce.

There will be a 60 day comment period for the proposed rule following publication in the Federal Register. In addition, EPA will hold a public hearing at the Millennium Knickerbocker Hotel in Chicago, IL. The hearing will start at 10 a.m. local time and will continue until everyone present has had a chance to speak. People wishing to testify at the hearing should notify Julia MacAllister at (734) 214-4131 (or at macallister.julia@epa.gov) by November 8, 2010. 150 phone lines will be available for those who wish to listen to the hearing but are unable to attend in person. During the hearing, you may call the following toll-free number: 1-866-299-3188. At the prompt, enter conference code 7342144423 followed by the # sign. Note that you will not be able to present testimony over the phone.

The Waiver Notices

EPA may consider a waiver for gasoline-ethanol blends greater than 10 vol% to be used in non flexible-fueled vehicles under its authority in Clean Air Act section 211 (f)(4).

EPA reviewed the March 2009 application from Growth Energy, available test data and public comments on the

NOTE: You will need Adobe Acrobat Reader, available as a free download, to view some of the files on this page. See [EPA's PDF page](#) to learn more about PDF, and for a link to the free Acrobat Reader.

ITM	PART NO.	DESCRIPTION	QTY	ITM	PART NO.	DESCRIPTION	QTY
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E15 (a blend of gasoline and ethanol) | Fuels & Fuel Additives | US EPA

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waiver request. On October 13, 2010, EPA determined that, subject to compliance with all of the conditions listed in the waiver decision, a gasoline produced with greater than E10 and no more than E15 will not cause or contribute to a failure of certain motor vehicles to achieve compliance with the emission standards to which they have been certified over their useful lives. Therefore, EPA partially and conditionally granted the waiver request application submitted by Growth Energy for its gasoline-ethanol blend with up to 15 vol% ethanol.

[Response to Application for Waiver](#) | [PDF Version](#) (58 pp, 4.57M, published November 4, 2010)

[Status Update](#) (July 2010)

[Status Update \(PDF\)](#) (2 pp, 493K, November 30, 2009)

Extension of Comment Period: [Notice](#) | [PDF Version](#) (2 pp, 75K, published May 20, 2009)

[Notice of Receipt of Waiver Application](#) | [PDF Version](#) (3 pp, 77K, published April 21, 2009)

For further information or assistance, please contact [Robert Anderson](#) at 202-343-9718 or anderson.robert@epa.gov.

The Regulations

Proposed Rule: Regulation to Mitigate the Misfueling of Vehicles and Engines with Gasoline Containing Greater than Ten Volume Percent Ethanol and Modifications to the Reformulated and Conventional Gasoline Programs

Fact Sheet: [EPA Announces E15 Partial Waiver Decision and Pump Labeling Proposal](#) | [PDF Version](#) (5 pp, 530K, October 13, 2010)

[Proposed Rule](#) | [PDF Version](#) (49 pp, 3.39M, published November 4, 2010)

For further information or assistance regarding please contact EPA's Assessment and Standards Division voicemail at: (734) 214-4636 or [email](mailto:ASDinfo@epa.gov): ASDinfo@epa.gov.

For more information, please contact the [EPA Fuels Programs Support Line](#) at 202-343-9755.

Please visit the EPA's Transportation and Air Quality web-based repository of mobile source documents, [Document Index System \(DIS\)](#). This searchable repository contains regulations, Federal Register notices, policy letters, and guidance documents.

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